5-1

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/385,978	08/30/1999	DAVID M. LEE	042390.P7544	9880

7590 03/21/2003

GLENN E VON TERSCH
BLAKELY SOKOLOFF TAYLOR AND ZAFMAN LLP
12400 WILSHIRE BOULEVARD 7TH FLOOR
LOS ANGELES, CA 90025

EXAMINER
VU, TRISHA U

ART UNIT	PAPER NUMBER
2189	

DATE MAILED: 03/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/385,978	Applicant(s) LEE ET AL.	
	Examiner Trisha U. Vu	Art Unit 2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 August 1999* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☑ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claims 1-42 are presented for examination.

Claim Objections

1. Claims 36 and 37 are objected to because of the following informalities: "a packet" should be changed to "the packet" to be consistent with claim 35.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-10, 17-19, 21-22, 31-35, 37, and 41 are rejected under 35 U.S.C. 102(e) as being anticipated by James et al. (5,841,989) (herein after James).

As to claim 1, James teaches a method of communicating between functional blocks comprising: originating a packet (by a producer); passing the packet (each node is capable of passing by any packets that are not targeted for that node) (col. 5, lines 6-10); decoding the packet (at least in col. 2, lines 7-14 wherein the producer creates a request to send over the bus to the consumer implies that the consumer will receive/decode the request packet in order to act appropriately on the request); and utilizing the packet (for reads/writes) (col. 2, lines 3-14).

As to claim 2, James further teaches originating is performed by a master (producer) (col. 2, lines 10-14).

As to claims 3, 4, James further teaches passing is performed by a first target, and decoding is performed by a first target (col. 5, lines 5-10 wherein multicast and broadcast packets imply that a first target receives/decodes the packet and passes the packet to other targeted nodes).

As to claims 5, 6, James further teaches decoding is performed by a second target, and passing is performed by the second target (col. 5, lines 5-10 wherein multicast and broadcast packets imply that a second target receives/decodes the packet and passes the packet to other targeted nodes).

As to claim 7, James further teaches utilizing is performed by the second target (col. 2, lines 3-15) and passing is performed by the second target (col. 25, lines 5-10

wherein multicast and broadcast packets imply that the second target passes the packet to other targeted nodes).

As to claim 8, James further teaches removing the packet (aged packets are discarded when they pass through the scrubber) (col. 6, lines 23-26).

As to claim 9, James further teaches the first target comprising a ring interface and a control, the second target comprising a ring interface and a control, the master comprising a ring interface and a control, a ring connecting to the ring interface of the first target, the ring interface of the second target, and the ring interface of the master in a daisy chain fashion, the ring used for the passing and the originating (Figs. 4, 5, 7 for interface connection between the nodes wherein node1 can be the first master and subsequent nodes can be targets, and col. 9, lines 17-21 wherein a control in each of the nodes can be at least a transmit unit 250 and/or a receive unit 252 with scrubber 218).

As to claim 10, James further teaches the master performing the removing after the passing brings the packet back to the master (col. 6, lines 23-26 and col. 40-44 wherein a scrubber for removing aged packets preferably is available within all of the nodes, and thus it can be implemented at the master node).

As to claim 17, James teaches a communications network comprising: a first master having a ring interface and a control; a first target having a ring interface and a control; a first ring connection coupling the ring interface of the first master to the ring interface of the first target; a second target having a ring interface and a control, the first ring connection for passing packets; and a second ring connection coupling the ring interface of the first target to the ring interface of the second target, the second ring

connection for passing packets; and a third ring connection coupling the ring interface of the second target to the ring interface of the first master, the third ring connection for passing packets (Figs. 4, 5, 7 for interface connection between the nodes wherein node1 can be the first master and subsequent nodes can be targets, and col. 9, lines 17-21 wherein a control in each of the nodes can be at least a transmit unit 250 and/or a receive unit 252 with scrubber 218).

As to claim 18, James further teaches the master originates a set of packets which are passed via the first ring connection to the first target (each node is capable of passing by any packets that are not targeted for that node) (col. 5, lines 6-10).

As to claim 19, James further teaches the first target passed the set of packets via the second ring connection to the second target; and the second target passes the set of packets via the third ring connection to the first master (each node is capable of passing by any packets that are not targeted for that node) (col. 5, lines 6-10).

As to claim 21, James teaches a communications network comprising: a first master; a first target; a second target; and a ring, the ring coupled to the first master, the ring coupled to the first target, and the ring coupled to the second target (Figs. 4, 5 for ring connection between the nodes wherein node1 can be the first master and subsequent nodes can be targets).

As to claim 22, James further teaches a second master, the ring coupled to the second master (Figs. 4, 5 and col. 5, lines 5-10 wherein node1 can be the first master and one of the subsequent nodes can be the second master).

As to claim 31, James further teaches the ring comprising a set of data lines, the data lines configured to transmit signals (bus to transmit packet) (col. 2, lines 7-11).

As to claim 32, James further teaches the first master utilizing the ring to transmit signals to the first target, the first target utilizing the ring to transmit signals to the second target, the second target utilizing the ring to transmit signals to the first master (col. 5, lines 1-9).

As to claim 33, James further teaches the first master comprising a ring interface coupled to the ring and a control coupled to the ring interface, the control suitable for generating packets, the packets transmitted through the ring interface to become signals on the ring (Figs. 4, 5, 7 for interface connection between the nodes, and col. 8, lines 34-54 wherein the control can be at least a transmit unit 250).

As to claim 34, James further teaches the first target comprising a ring interface and a decoder coupled to the ring interface, the decoder receiving the signals that represent a packet (receive unit 252) (Figs. 4, 5, 7 for interface connection between the nodes), the decoder determining if the packet is addressed to the first target (by TargetID field 92 of the packet as shown in Fig. 2).

As to claim 35, James further teaches the second target comprising a ring interface and a decoder coupled to the ring interface, the decoder receiving the signals that represent a packet (receive unit 252) (Figs. 4, 5, 7 for interface connection between the nodes), the decoder determining if the packet is addressed to the second target (by TargetID field 92 of the packet as shown in Fig. 2).

As to claim 37, James further teaches the packet comprised of a fixed number of units of data, the units of data encoding an address (TargetID and/or SourceID) (col. 1, lines 41-44 and col. 5, lines 51-64).

As to claim 41, James further teaches the second master comprising a buffer (elasticity buffers 222 and 224), the buffer utilized for storing incoming data when the second master originates a packet, the incoming data passed after the second master completes origination of the packet (Fig. 7 and col. 8, lines 34-45).

3. Claim 42 is rejected under 35 U.S.C. 102(b) as being anticipated by Szczepanek (5,374,926).

As to claim 42, Szczepanek teaches a system comprising: a processor (communication processor 11); a processor bus coupled to the processor (bus 16); a data chip coupled to the processor bus (RAM 14); and an address chip coupled to the processor bus and coupled to the data chip (external address compass logic 10, protocol handler 12, and/or ring I/F 9); the address chip including a configuration ring (through ring interface 9), the configuration ring having a master, a first target and a second target, the master coupled through a ring to the first target, the first target coupled through the ring to the second target, the second target coupled through the ring to the master (Figs. 1 and 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 20, 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over James et al. (5,841,989) (herein after James).

As to claim 20, the argument above for claim 19 applies. However, James does not explicitly teach the first target comprises a first configuration block on an integrated circuit; and the second target comprises a second configuration block on the integrated circuit. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the first and second targets to comprise a first and second configuration block on the integrated circuit since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works,* 150 U.S. 164 (1893).

As to claim 38, the argument above for claim 21 applies. However, James does not explicitly teach the first master, the first target and the second target on an integrated circuit. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the first and second targets to comprise a first and second configuration block on the integrated circuit since it has been held that forming in

one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works,* 150 U.S. 164 (1893).

As to claim 39, the argument above for claim 21 applies. However, James does not explicitly teach the first master and the first target on a first integrated circuit, the second target on a second integrated circuit. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the first and second targets to comprise a first and second configuration block on the integrated circuit since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works,* 150 U.S. 164 (1893).

As to claim 40, the argument above for claim 21 applies. However, James does not explicitly teach the first master on a first integrated circuit, the first target and the second target on a second integrated circuit. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the first and second targets to comprise a first and second configuration block on the integrated circuit since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works,* 150 U.S. 164 (1893).

5. Claims 11-16, 23-25, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over James et al. (5,841,989) (herein after James) as applied to claims 1-10, 17-19,

21-22, 31-35, 37, and 41 above, and further in view of Christiansen et al. (5,983,302) (herein after Christiansen).

As to claim 11, James further teaches a ring used for the originating and the passing (col. 3, lines 5-10). However, James does not explicitly disclose requesting the ring and granting the ring. Christiansen teaches requesting and granting a shared bus (col. 5, lines 26-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include requesting and granting the shared bus as taught by Christiansen in the ring system of James to provide a computer system wherein the control of a shared bus by a plurality of devices include in the computer system is provided in a manner whereby overall operating efficiency is enhanced without effectively denying one or more devices in the computer system form control of the bus for extended periods of time (col. 2, lines 49-54).

As to claim 12, James further teaches the originating is performed by a first master (col. 2, lines 10-14).

As to claim 13, Christiansen further teaches the requesting is performed by a second master (col. 5, lines 34-56).

As to claim 14, Christiansen further teaches the granting is performed by the first master (by arbiter 22) (col. 5, lines 17-33 wherein arbiter 22 can be located anywhere throughout the computer system, thus it can be located as part of a first master device).

As to claim 15, Christiansen further teaches the granting is performed by an arbiter (by arbiter 22) (col. 5, lines 17-33).

As to claim 16, Christiansen further teaches arbitrating between a first master requesting the ring and a second master requesting the ring (col. 5, lines 50-56).

As to claim 23, James does not explicitly disclose an arbitrator, the arbitrator coupled to the first mater, the arbitrator coupled to the second master, the arbitrator controlling activity of the first master and the second master. Christiansen teaches an arbitrator coupled to requesting devices, the arbitrator controlling activity of the requesting devices (col. 5, lines 26-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an arbitrator coupling to the requesting devices and controlling the activity of requesting devices as taught by Christiansen in the ring system of James to provide a computer system wherein the control of a shared bus by a plurality of devices include in the computer system is provided in a manner whereby overall operating efficiency is enhanced without effectively denying one or more devices in the computer system form control of the bus for extended periods of time (col. 2, lines 49-54).

As to claim 24, Christiansen further teaches a request line (request line 28), the request line coupled to the first master, the request line coupled to the second master (requesting devices); and a grant line (grant line 30), the grant line coupled to the first master, the grant line coupled to the second master (Fig. 2).

As to claim 25, Christiansen further teaches the request line configured to pass signals in a first direction, the grant line configured to pass signals in a second direction (Fig. 2).

As to claim 27, James does not explicitly disclose a request line, the request line coupled to the first master, the request line coupled to the second master, the request line coupled to the first target, the request line coupled to the second target. Christiansen teaches a request line coupled to requesting devices (col. 5, lines 26-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a request line coupling to the requesting devices as taught by Christiansen in the ring system of James to provide a computer system wherein the control of a shared bus by a plurality of devices include in the computer system is provided in a manner whereby overall operating efficiency is enhanced without effectively denying one or more devices in the computer system form control of the bus for extended periods of time (col. 2, lines 49-54).

As to claim 28, Christiansen further teaches the request line configured such that signals flow in a logically opposite direction to signals on the ring (Fig. 2).

As to claim 29, James further teaches a set of data lines configured to transmit signals (bus to transmit packet) (col. 2, lines 7-11). However, James does not explicitly teach a grant line. Christiansen further teaches a grant line configured to indicate a master may use the ring (grant line 30) (Fig. 2).

6. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over James et al. (5,841,989) (herein after James) and Christiansen et al. (5,983,302) (herein after Christiansen) as applied to claims 11-16, 23-25, and 27-29 above, and further in view of Desyllas et al. (4,697,268) (herein after Desyllas).

As to claim 26, James and Christiansen do not explicitly teach the first direction and the second direction dynamically alterable. Desyllas teaches bus request/grant directions are dynamically alterable (col. 2, lines 38-50 wherein bus request/grant lines are bi-directional lines for carrying request and grant signals in opposite direction, this implies that opposite directions are dynamically alterable since the lines are bi-directional lines). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include bi-directional request/grant lines (dynamically alterable request/grant directions) as taught by Desyllas in the system of Christiansen to provide alternate path for data transmission and thus improve the system's speed.

7. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over James et al. (5,841,989) (herein after James) and Christiansen et al. (5,983,302) (herein after Christiansen) as applied to claims 11-16, 23-25, and 27-29 above, and further in view of PCI Local Bus Specification (Herein after PCI Spec).

As to claim 30, James does not explicitly teach a packet valid line configured to indicate whether a valid packet is being transmitted on the ring. Christiansen further teaches a PCI local bus for transmitting data between requesting devices (Fig. 2). Therefore, it is inherent that the PCI local bus has a packet valid line configured to indicate whether a valid packet is being transmitted on the ring (FRAME# line). PCI Spec is being provided as evidence that a PCI local bus comprises a FRAME# line.

8. Claim 36 is rejected under 35 U.S.C. 102(e) as being anticipated by James et al. (5,841,989) (herein after James) as applied to claims 1-10, 17-19, 21-22, 31-35, 37, and 41 above, and further in view of Hartmann et al. (6,047,002).

As to claim 36, James further teaches the packet comprised of a header and a set of data (Fig. 2 and col. 12, lines 46-67). However, James does not explicitly teach the header including an indication of the logical size of the set of data. Hartmann teaches a header including an indication of the logical size of the set of data (data length field (col. 11, lines 50-57). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a header including an indication of the logical size of the set of data as taught by Hartmann in the system of James to provide the system with the ability to transmit packets of different sizes wherein the data size field helps the receive unit to better utilize its buffer to store data.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, as the art discloses:

ring communication between nodes:

US Patent 6,266,336 Siegel et al.

US Patent 5,886,992 Raatikainen et al.

US Patent 5,301,185 Cherry

ring arbitration :

US Patent 6,377,582 Neiger

US Patent 6,330,245 Brewer et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trisha U. Vu whose telephone number is 703-305-5959. The examiner can normally be reached on Mon-Thur and alternate Fri from 7:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 703-305-4815. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Trisha U. Vu
Examiner
Art Unit 2189

uv
March 12, 2003

Glenn A. Auve
Primary Patent Examiner
Technology Center 2100